Theoretical Combustible Value.	C-poorest Distillation Gas.	C-richest Distillation Gas.
Distillation gas . Steam- air gas Total combustible value	Gals. 1-23 HdX 3,850=4,928 0-744 kg. 0X6,200=4,613	Cals. 1-21 HrfX4,060=4,912 0-728 kg. Gx6,200=:4,47(>
	9,541	9,388

Difference 153 calories = 1*5 per cent, on both limit values. In reality, the gas had a combustible value of 7*09 X 1,042 = 7,390 calories, thus showing about 2,000 calories less.
Marsh gas should be found in the gas.
OH4 l-28HrfXO-27=0-34 cbm. But there was present 0*08 ,,
1-21
cbm.
0-08
Leaving balance 0*26 cbm. QH4
0-34 cbm.
Such a large difference cannot possibly be explained alone by an anomalous composition of the distillation gas. A single assumption remains over, and this is, that the deficient amount of CH4 has been burnt. In regard to this, free oxygen has been shown to be present in the gas, and from the combustion of CELt also, the high nitrogen would unreservedly admit of explanation. Then for combustion of 0*26 cubic metre CH4, 0*52 cubic metre 0 would be required, which would introduce 1*96 cubic metre more nitrogen into the gas.
If the gas had not had its CE* selected for combustion, one must further add to the composition of the gas the amount of the CH4 burnt, but deduct the products of combustion of the
same.
For .
0 required is 0-52 The products of combustion are
' C02 . . 0-26 .
N . . 1-96 .
H20 vapour . 0*52 .
0-26 cubic metre OHd | 0*34 cubic metre CH4
0
0-68
0-34 2-56 0-68
0
002
N
H20 vapour
The H20 vapour does not come into consideration for this calculation.
Simultaneously with these products of combustion let the air excess of 0*02 0 and 0*08 N be eliminated.